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Over-generalized rationales: an analysis of Carolyn R. Miller's influential article "a humanistic rationale for technical writing"

Anders E. Runestad
Iowa State University

Over-generalized rationales:

An analysis of Carolyn R. Miller's influential article

"a humanistic rationale for technical writing"

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Anders Edward Runestad

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Signature redacted for privacy

Major Professor

Signature redacted for privacy

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This work is dedicated with much love
to my parents,
Jay and Judith Runestad.

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INTRODUCTION

As both an undergraduate and graduate student in an English department, I have noticed certain attitudes about science and technology that seemed extremely prevalent to me. These views seemed prevalent in my immediate academic environment and, judging by the literature I was exposed to, prevalent throughout the field. The kind of *social constructionist* attitudes I mean can be summarized as follows: "Scientific knowledge is not nearly as absolute or objective a thing as it has been characterized as being. It is extremely relative, and no more relates to an objective reality than does rhetoric."

I do not agree with this viewpoint for reasons that shall be explained, and I have noticed something about those who subscribe to these views when we would discuss our differences: Those who espouse such views will admit the existence of an objective reality when probed. Ask anyone who says that there is no objective reality what will happen if he or she jumps off a ten-story building and one is greeted with the annoyance of being misunderstood, and perhaps a patronizing chuckle. They say something like "Well, of course reality is there, but that doesn't mean that you or I can really understand it. It's all relative to how we each perceive it."

Under this view, it must be a very lucky thing that we each perceive reality in the same way when it comes to jumping off ten-story buildings. Well, if reality is "of course" there, then *what is the point of talking as if it isn't*? This is the central conceit of this type of thinking: The social constructionist *talks* as if reality is so relative that one could leap off a tall building and fly like Superman, while he still *acts* in accordance with reality. And when he is called on this contradiction, the anti-realist just says that his critic misunderstands him.

In my second year of taking graduate level courses, I stumbled across an article by Patrick Moore in the January 1996 issue of *Journal of Business and Technical Communication*. Moore's article, "Instrumental Discourse Is as Humanistic as Rhetoric", took to task the attitude that I had encountered, particularly in regard to technical writing and rhetoric. Among the main exponents of this attitude, Moore singled out Carolyn R. Miller's "well-known" 1979 article "A Humanistic Rationale for Technical Writing" (referred to from hereon as "Humanistic Rationale"). (Moore I 100)

But Miller's article is more than just "well-known," according to Elizabeth Overman Smith in "Intertextual Connections to 'A Humanistic Rationale for Technical Writing,'" an article that is entirely devoted to analyzing the notable volume and nature of references to Miller's article. As Smith summarizes it in her abstract, "The 68 references, or intertextual connections, to 'Humanistic Rationale' between 1979 and 1995 demonstrate its influence and show the evolution of technical communication and the issues important to technical communication professionals." (Smith 192) The article has also been influential as a source of attitudes toward science: "Authors frequently cite Miller's definition of positivism, opposing it to descriptions of the social construction of knowledge (e.g., Blyler, 'Theory'; Bosley; Coney; Elliot and Zelhart; Parsons, 'Why')." (199)

How do the authors who reference Miller's article treat it? Smith:

> The authors do not question Miller's position; rather, they build on it. They propose academic programs in technical communication sometimes with the language of a revolution but more frequently with the rhetoric needed to persuade colleagues and boards of higher education of the need for them.

> Authors accept the social construction of knowledge as an underlying concept for technical communication. (208)

That is, these authors accept the view that I earlier described having observed, and have also been influenced by Miller. They accept "the social construction of knowledge" and, therefore, those who do so can be called social constructionists. Furthermore, Miller's article is so established that

> The authors quote from "Humanistic Rationale" to establish a frame of reference—however, in the later articles the references become more distant. For example, the gender studies, the discussions of visuals, and the studies of the workplace do not specifically refer to Miller's claims. Instead, they point to "Humanistic Rationale" by title and publication date or include a footnote but then assume the reader knows Miller's knowledge claims. (216)

Allow me to add emphasis to the end of that last sentence, wherein Smith says that "Humanistic Rationale" is so established that authors will "*assume the reader knows Miller's knowledge claims*." And as for what Smith herself thinks of Miller's influential article, this sentence from her conclusion is illustrative: "'Humanistic Rationale' provides an articulate statement about technical communication that has become part of the enculturation of its members into the profession, in particular those members associated with the academy." (217) And my impression that such viewpoints are almost orthodox in the field may, after all, be accurate: "Positions like Miller's are exceedingly popular in certain contemporary academic circles." (Hagge 463)

But I contend that Miller's article is not so worthy as its great influence would indicate. And in this thesis, I intend to demonstrate that it is deeply flawed. At the most

general level, "Humanistic Rationale" suffers from Miller's tendency to over-generalize. This predilection appears in multiple forms: use of writing techniques that spawn inaccuracies, untenable assumptions about science and "positivism," imprecisely expressed ideas about technical writing, and vague advice for improving the field. These variations on the theme of over-generalization are the flaws in Miller's article that I am going to examine in detail in this thesis.

But before I can attempt to demonstrate the flaws of "Humanistic Rationale," we must first understand its general scope. To that end, here are the article's main points in brief:

(1) It is possible to consider technical writing as humanistic.

(2) However, it is currently very difficult to do so as technical writing is weighed down under what Miller calls a "positivist" scientific legacy that forces technical writing to be unhumanistic.

(3) Technical writing can become humanistic by scrapping its alleged "positivist" trappings and then embracing a set of different, social constructionist attitudes toward scientific practice and technical writing.

My thesis addresses Miller's article according to the following arrangement:

(1) **Chapter I** details Miller's major and minor points, and my objections to them. But it is moreso an examination of Miller's writing itself. Throughout the article, Miller uses unstated implications and assumptions, selective wording, selective sentence structures, and vague expressions. As I intend to show, understanding *how* Miller gets her points across in

"Humanistic Rationale" is actually every bit as important as the points themselves.

(2) **Chapter II** examines Miller's conception of science, specifically in her description of it as "positivist," and in her assumption that all or nearly all scientists hold this view. I intend to show that the view of science she labels "positivist" cannot be accurately labeled as such, and that real philosophers of science and scientists are not nearly so uniform in their ideas.

(3) **Chapter III** examines Miller's approach to technical writing itself. Very little of "Humanistic Rationale" directly deals with technical writing and when it does, Miller's unfortunate tendency to over-generalize is as pronounced as it is elsewhere. She is highly critical of some definitions of technical writing with which she disagrees, but she does not bother to give readers her own definition of technical writing. And, in general, Miller does not present any advice or observations about technical writing that are likely to be of use to others. I intend to show that Miller's ideas about technical writing are more assumed than argued, and are therefore highly questionable to anyone who does not share her assumptions.

(4) **Chapter IV** examines the final two pages of "Humanistic Rationale," in which Miller presents her solutions to the problems she alleges. I intend to show that Miller's recommendations are thoroughly marred by her tendency to over-generalize, and more specifically by her continued reliance on unargued assumptions.

(5) **Chapter V** summarizes my analysis of Miller's article and presents my conclusions. I intend to demonstrate that my article has shown that "Humanistic Rationale" is deeply flawed. And because of the tremendous influence that the article has had, it follows that some skepticism may be in order when dealing with social constructionism, at least as it is proposed by the many authors who have been influenced by Miller.

And now, I will begin Chapter I with a summary of Miller's ideas in "Humanistic Rationale."

CHAPTER I

MILLER'S ARTICLE & TECHNIQUES

Summary

Miller begins "Humanistic Rationale" by describing a "committee discussion" at the "large technological university" where she works, on the issue of whether students should be allowed to fulfill a humanities requirement by taking a technical writing course. Those in the discussion who taught literature were against the idea and those who taught technical writing were, in Miller's view, largely "baffled." Miller gets to the source of this bafflement: ". . .were we willing to argue, indeed, *could* we argue that technical writing has humanistic value?" (Miller 610)

The argument can be made, says Miller, but only by jettisoning the "lingering but pervasive positivist view of science" in favor of some new ideas. (610) She claims that "in this view, science and rhetoric are mutually exclusive" and that "technical writing textbooks are suffused with this view of both science and rhetoric." (611)

But what is worst about the "positivist" view, according to Miller, is that "it is a form of intellectual coercion" that privileges science. She says that the alleged "positivist" legacy destroys technical writing's "aspirations toward disciplinary respectability and relegate it to its status as a skills course." (613)

Miller claims that, under this alleged "positivist" worldview, it has been difficult to create an accurate and useful definition of technical writing: "Definition of the subject has been a continuing problem in the teaching of technical writing." (613) She says that another major problem with technical writing under the supposed "positivist" model is "the emphasis

on form and style at the expense of invention." A third major problem according to Miller is that the alleged "positivist" legacy has forced technical writers to try to sound objective and impartial, a move which she says "directly implement[s] the positivist epistemology." (614) Miller claims that under "positivism," audiences tend to be categorized into levels, a trend which she finds problematic. According to Miller, "we need broader and more flexible methods which will permit analysis of the relationship between the writer and reader." (614—15)

Miller claims that the supposed "positivist" legacy has caused technical writing to be commonly seen as a dull, necessary evil: "Consequently, students look upon writing as a superfluous, bothersome, and usually irrelevant aspect of their technical work." But she says that a "new epistemology," which "makes human knowledge thoroughly relative and science fundamentally rhetorical," has already been embraced by "most philosophers of science" and "most thoughtful scientists." Miller claims that this view "holds that whatever we know of reality is created by individual action and communal assent." Scientific knowledge then, according to Miller, is just as relative as any other kind of knowledge. (615)

Miller then contends that technical writing, and the teaching of it, will be improved by abandoning the "positivist" worldview for the "new" one. Among other benefits that she says will be made possible by this change, "we may be able to reconceptualize our entire discipline in a more systematic way." (616) But perhaps most important of all, according to Miller, this change will give the reason needed to plausibly argue for technical writing as humanistic; in essence, the "humanistic rationale" of the article's title. (617)

Initial Comments

Before discussing any of my criticisms of Miller's article, I will first summarize them by the following list:

(1) The view of science that Miller labels "positivist" cannot accurately be labeled "positivist."

(2) The view of science that Miller labels "positivist" has not been as dominant as she claims that it has been.

(3) The changes that Miller suggests will not improve the practice or teaching of technical writing.

(4) Miller's solutions to the problems she alleges are uselessly vague and inconclusive.

I intend to show in the following chapters that these flaws which I object to originate in Miller's tendency for over-generalization. I will discuss in Chapter II how her use of the term "positivist" and her assumptions about scientists are gross over-simplifications. I will analyze in Chapter III how Miller's treatment of technical writing suffers from her over-generalizing tendencies, and Chapter IV will cover Miller's imprecise solutions. But what I will now do here in Chapter I is analyze not the content, but the rhetorical technique of Miller's article. I will present selected examples from "Humanistic Rationale" with my comments interspersed between them.

The key aspect of Miller's writing in "Humanistic Rationale" is that she does not present actual arguments for her ideas at any point. Instead of arguing for her ideas, Miller relentlessly makes them seem better and her opponents' ideas worse by the rhetorical strategies she employs. Specifically, she uses **(A)** unstated negative implications and

assumptions about her opponents ideas, unstated positive implications and assumptions about her own ideas, **(B)** selectively negative wording for her opponents' ideas, selectively positive wording for her own ideas, **(C)** selective sentence structures to create impressions in readers' minds, and **(D)** vague expressions that avoid specificity.

(A) Unstated Implications & Assumptions

To return to the above quote from the opening paragraph of "Humanistic Rationale," ". . .were we willing to argue, indeed, *could* we argue that technical writing has humanistic value?" (610) The emphasis in this quote is in the original and is worth noting for what it implies. The very use of the word "could," along with the emphasis given it, implies the impossibility of even making this argument. And why could the point not even be argued? It is not explicated here, but the wording of this first paragraph definitely implies that arguing in favor of technical writing having humanistic value is completely unacceptable in the environment of a "large technological university."

So before Miller has made any actual arguments about science, technology, or positivism, she has already set up an opposition between humanism and technology. The two are separate and uneasily combined at best. That is a powerful implication, because it can cause readers to automatically think of technology as inherently unhumanistic. But this implication is especially powerful since it is *not actually argued* but *assumed outright* by the author.

Miller continues in the second paragraph: "I believe that the argument can be made, and on firm and respectable grounds." (610) Miller believes that this humanism versus technology paradigm (to use Thomas Kuhn's famous term) can be overcome, even "on firm

and respectable grounds." But this use of "respectable" is problematic, as it carries implications of its own. For respectability is a socially determined value that has no independent verifiability outside a given community that consents to consider certain things respectable, and others unrespectable. Miller is here giving readers another implied, but not argued, idea: The standards by which ideas are evaluated can be accepted or rejected on the basis of group consensus.

This idea aligns with the social constructionist idea I wrote about in my introduction, which can be summarized as "reality is relative." If one believes that reality itself is relative, then it is not necessarily a stretch to believe that all ideas are relative.

Miller continues on the subject of these firm and respectable grounds: "But the way to it is not clear. The reasoning is obscured by a tradition of thought in both the sciences and the humanities, a tradition which has become a tacit understanding, a form of common sense." (610) So respectability is obscured here; the group cannot come to consensus automatically because a "tradition" stands in the way.

If a tradition is an impediment to progress in this situation, then we might be tempted to generalize and believe that all traditions and things traditional are standing in the way of some kind of progress. But what is most interesting about Miller's subtle disdain for tradition is the fact that tradition is something that few would disagree is socially constructed. Miller is thus blatantly in favor of social constructionism, while she finds some social constructions which she disagrees with. And since she never says one negative word about social constructionism in "Humanistic Rationale," it is not clear whether this apparent contradiction is unconscious, or rather something that is just not explicated in the article.

It is also worth noting that, according to Miller, this tradition has handicapped "both the sciences and the humanities." This implies that science is not to be blamed for anything but, rather the tradition that has harmed the humanities has also been very unkind to science. Thus, our respectable argument in favor of combining technology and humanism can assumably be accepted by scientists if they can only get past this alleged, oppressive tradition. This is important, for Miller is implying that she is not opposed to science when it is portrayed as another tradition-victim.

Miller also says in the above quote that the tradition has become "a form of common sense." By attacking common sense, the pump has been primed for Miller's next statement: "Making the argument requires articulating some new notions of what science is and does and some corresponding new notions of what technical and scientific rhetoric can be and do." (610) So Miller here explicitly makes her case against tradition because she has made it clear that something "new" is needed. And if one agrees with the assumptions that Miller has given us so far—that technical writing is currently perceived as unhumanistic, that tradition is stifling to progress, and that disliked ideas can be shrugged off by group consensus—one may be automatically ready to believe Miller's call for the unspecified "new."

Miller continues: "I wish to argue that the common opinion that the undergraduate technical writing course is a 'skills' course with little or no humanistic value is the result of a lingering but pervasive positivist view of science. In this view, human knowledge, of which we may take science to be a model, is a matter of getting closer to the material things of reality and farther away from the confusing and untrustworthy imperfections of words and minds." (610)

Using the term "lingering but pervasive positivist view of science" in the second paragraph of the article is a powerful way of getting the reader to believe that there is indeed a lingering but pervasive "positivist" view of science at work in the intellectual climate in which "Humanistic Rationale" was published. This is because the existence of this pervasive "positivist" view is never argued at all, but is simply assumed to exist. Its existence is made all the more believable when Miller's definition of "positivism" appears two pages later: while the reader is concerned with understanding Miller's definition—and is only remembering that the term appeared somewhere earlier in the article—his mind is unlikely to be wondering if Miller ever established the very *existence* of this pernicious positivist tradition. "'Positivism' appeared at some earlier point, now it is being defined, and that is enough to legitimize Miller's use of the term"—a reader might unconsciously think, so long as he is not too critical and observant.

In considering the passage quoted above, it is interesting that Miller assumes that technical writing courses are considered to be mere "'skills' course[s] with little or no humanistic value . . ." She does not actually argue that "skills courses" are unhumanistic, or prove that all technical writing courses are thought of as "mere skills courses," but she does assume both ideas to be true. And just as "tradition" is given a negative connotation by Miller's use of it, the word "skills" is rendered unappealing by being "mere" and by having "little or humanistic value." But it is equally arguable that the learning of skills is highly humanistic, as it can help students learn how to formulate better arguments, analyze ideas, and communicate clearly and effectively through the forms of writing that they are expected to use in the business world. There may indeed be a case for Miller's negative view of skills, but she does not make it, relying instead on unargued assumption.

(B) Selective Wording

The sixth sentence of Miller's second paragraph reveals some more assumptions about the viewpoint that she calls "positivist": "In this view, human knowledge, of which we may take science to be a model, is a matter of getting closer to the material things of reality and farther away from the confusing and untrustworthy imperfections of words and minds." (610) But what this passage does is not so much describe "positivism," as set up this view of language as a negative in order that its opposite may appear to be a positive.

Miller continues: "Technical and scientific rhetoric becomes the skill of *subduing* language so that it most accurately and directly transmits reality. It aims at being an *efficient* way of *coercing* minds to *submit* to reality [emphasis mine]." (610) And thus Miller has sidestepped the possibility that being concerned with precise and clear language can be a legitimate goal. The reader is now shuttled away from the terrible extreme of "subduing language" and may be ready to accept its opposite extreme which, whatever else it is, will certainly fall under Miller's category of "new notions of what technical and scientific rhetoric can be and do." The possibility of any moderate view here is—and will continue to be—precluded entirely.

Now note Miller's choice of words. The words that I have emphasized show that she has inserted three powerful words for the same general concept into two sentences. Language is a helpless victim who is *subdued* and *coerced* into *submission*. The subtle, unstated effect of this choice of words is to create the impression that language has been *violated*, as if by rape. Note also the subtle, adjective use of the word "efficient." It is a subconscious reminder to readers that science and technology (or possibly just the alleged

"positivist" tradition) are the perpetrators of this violation (efficiency being a prime value in technological, industrial endeavors).

And just what precisely are they forced to submit to? Only reality, and Miller does not explain what is so unusual or terrible about this submission. It is not clear why the alleged "positivist" legacy, science, and technology has any need to force language to conform to reality. Indeed, reality seems to have a way of doing that to anything and everything on its own. To quote Patrick Moore:

> Technical communication aims to allow the mind to oppose the coercions of reality, not "to submit to reality." Reality arrays many powers against people, and we must find ways to govern, guide, and control those powers. For example, the external world coerces us: The elements blow against us, freeze us, overheat us, and drown us . . . To resist these pressures, people have developed instrumental uses of discourse: Engineers write specifications for the designs of heating or air-conditioning units, which are manufactured according to certain procedures by factory workers and made usable to lay people through operating instructions . . . (Moore I 112)

Or, to put it another way: If one jumps in front of a semi truck moving on the interstate at 70 miles per hour, the force of the truck's impact will be fatal whether one believes it will be or not. A corollary is that this inability of human beings to withstand collisions with automobiles is a main reason for why parents try to choose the clearest and most effective language they can muster in order to teach their children to not play in the street. It is arguably a very positive—and not necessarily "positivist"—thing that language is regularly subdued and coerced to submit to reality when ideas directly pertaining to our

actions in the physical world are being communicated. If language is not so coerced, the results for the human beings who communicate with it can sometimes be fatal.

Let it not be forgotten, however, that even though the coercion that Miller speaks of is a useful and beneficial one, the word itself has a negative connotation. The coercion of language only begins to appear positive when examined. Miller has used a term that will almost certainly create a negative association in the reader's mind when she could have used a less connotative word, such as "adjusted." And there is also the question of how legitimate Miller's extensive use of metaphorical language is, as exemplified by her use of terms like "coercion" and "subdued" in regard to things like "reality" and "language." For something to be coerced or subdued, it must be able to **(1)** act on its own and **(2)** be aware of what it does or does not want to do.

But language does not fit these criteria, it is (to use a term which might be agreeable to Miller) a social construction which is used by humans, who do fit these criteria. Therefore, one human being could coerce another human being into using particular language (such as a bank robber forcing an unfortunate bank employee to read a ransom note over the telephone at gunpoint), but language cannot in itself coerce or be coerced (or subdue or be subdued, for that matter). Language is only a living thing in a metaphorical sense, but Miller's metaphorical use of terms like "coercion" arguably seem to be not so much illustrations of larger ideas, but statements that are supposed to stand on their own. The submerged implication of this use of metaphor is that reality is as socially constructed as language itself, rendering a distinction between metaphorical and non-metaphorical language meaningless.

(C) Strategic Sentence Structures

Miller, at the end of her fifth paragraph, opines on the view of science and rhetoric expressed in some technical writing textbooks. These books are "suffused" with the "positivist" view she disagrees with, the examples she reviews are "typical." (Miller 611) Miller: "They all presuppose what has been called the 'windowpane theory of language': the notion that language provides a view out onto the real world, a view which may be clear or obfuscated. If language is clear, then we see reality accurately; if language is highly decorative or opaque, then we see what is not really there or we see it with difficulty." (611—612)

The examples that Miller quotes earlier are indeed concerned with making distinctions between clear and unclear language, so presupposition of the "windowpane theory" is not unreasonable, though still unproven. However Miller's use of the term, never defined, seems to be left hanging (a blank line separates it from her next paragraph) so that it can take on the quality of what precedes it. Miller does not actually say anything negative about this windowpane theory, but it is situated at the end of a string of ideas that Miller dislikes. And so we are left to assume that the windowpane theory is bad, guilty by association, although we are never directly told what is supposed to be wrong with it.

(D) Vagueness

This is the conclusion of Miller's fifteenth paragraph:

> If audience adaptation is to be central to technical writing, we need broader and more flexible methods which will permit analysis of the relationship between the writer and the reader. For we have not said anything very useful

> about the writer-reader relationship when we say that the purpose in technical writing is to be clear. Why has it been so difficult in a technical writing class to talk about the relationship between writer and readers and the reasons for saying anything about a subject in the first place? (615)

The first sentence of the above passage is another example of the yearning for the unspecified "new" that Miller idealized earlier in her article: In this case, things must be "broader and more flexible" than they are currently. This certainly gives the sentence a nice, tolerant, open-minded ring, but it is actually a dead end since Miller never elaborates on *how* things can become "broader and more flexible." In regard to the second sentence from the above quotation, Miller is arguably wrong in her contention that "we have not said anything very useful about the writer-reader relationship when we say that the purpose in technical writing is to be clear." It is just as arguable that we have said something *very* useful about the writer-reader relationship when we have affirmed the need for clarity. As I argued earlier, in section **(B)**, technical writing must be clear in order to be useful. Unclear technical writing may actually be dangerous or fatal, and so it is not necessarily unreasonable to "say that the purpose in technical writing is to be clear."

The third sentence in the above passage, in addition to being vague, is over-dramatic and underhanded: It begins "Why has it been so difficult . . ." without going to the trouble of establishing that it really *has* been difficult. How can one agree or disagree with a statement phrased in this way?

Comments & Further Examples

Miller's four techniques which I have just analyzed were, as I stated earlier, illustrated by selected examples from throughout "Humanistic Rationale." In my examples, any specific rhetorical technique of Miller's that I was analyzing tended to be illustrated by an example that did not also illustrate another of her rhetorical techniques. But these rhetorical strategies appear elsewhere throughout the article, and often in concert with one another in the same paragraphs. And again, these rhetorical devices carry all the weight of Miller's opinions, as there are no actual arguments advanced in "Humanistic Rationale" for those opinions.

In Miller's third paragraph is a preview of the points to be covered in the rest of her article; the wording of this preview is a subtle combination of unargued assumption and selected wording. The first sentence: "Because the positivist view has supported both the rhetoric we call scientific and that we call technical and provides no systematic way to distinguish the two, in this essay I begin by treating them together." (610—611) Note the choice of words: "rhetoric *we call* scientific and that *we call* technical . . ." instead of "scientific rhetoric" and "technical rhetoric." The appeal to group consensus is here again, as the implication of Miller's word choice is that rhetoric is only scientific or technical if "we" agree that it is.

This makes some sense, as rhetoric is composed of language, and language can only function as communication if human beings agree to the meanings of words. An example would be that some sets of words could constitute scientific or technical language (and, depending on our definition of rhetoric, there could also be scientific or technical rhetoric).

However, Miller's use of the word "rhetoric" as the subject of the sentence (right up front, with no preceding adjectives) gives the reader a subconscious sense of rhetoric being a thing of tremendous importance, even of respect. Her choice of words also carry a subtle implication that science and technology are relativistic things, areas of knowledge where ideas are as much matters of opinion as in a literature class. These implications of Miller's subtle word choice are completely in line with what she says about rhetoric and the nature of scientific and technical knowledge throughout the rest of the article.

Miller again mixes subtle word choices with unstated assumptions in her next sentence: "I shall first summarize the main features of positivist science and illustrate how this view of science pervades the way we define and evaluate technical writing." (611) Why does Miller here refer to technical writing as "technical writing" and not "the writing we call technical"? Whether she realized it or not, there is no doubt that she has given special attention to the word "rhetoric" in the very previous sentence. She has not brought out the word "writing" as she done with "rhetoric." And in the same way, Miller has given the reader another unconscious encouragement to accept her appraisal of "positivism" by use of the phrase "main features of positivist science" (certainly not "the science we call 'positivist'"). The phrase "positivist science" is also a subtle encouragement to unwittingly think of science *as* "positivist," without the use of any arguments. And at this point in the article, we are still a page away from Miller's actual definition of "positivism."

Here is the remainder of Miller's third paragraph: "I shall attribute some of our pedagogical problems to the positivist legacy. Then I shall sketch the new thinking in the philosophy of science and suggest its particular relevance for technical writing. Finally, I shall be able to suggest how this altered view of science, and of the relationship between

science and rhetoric, can provide a basis for seeing technical writing as a more humanistic and less coercive endeavor." (611)

A certain clause, stuck between commas in a sub-level of the sentence's main idea (like this clause), is noteworthy: ". . . , and of the relationship between science and rhetoric, . . ." Miller is making another unargued assumption: She assumes that science and rhetoric do have a "relationship." Miller is also building up to rhetoric being discussed more directly, based on this reference, the reference earlier in the third paragraph, and those in the second paragraph.

But the most interesting part of the sentence is how it ends: ". . . a basis for seeing technical writing as a *more humanistic* and *less coercive* endeavor." This is the most subtle implication yet that technical writing is currently unhumanistic. The technique by which the reader is subtly given this message is the same one used in that classic loaded question: "Are you *still* beating your dog?" The key word there is "still" because it allows the questioner to *assume without actually establishing the fact* that the person he addresses has been beating her dog. In the same way, the alleged anti-humanism and coercion that are supposed to be dogging technical writing are assumed to exist without ever actually being established.

In the following chapters I will examine other aspects of Miller's article (as detailed above). But it must be noted that when I quote again from Miller, although the emphasis will not be on her rhetorical technique, the observations I have made about them here apply equally to those subsequent quotations. Those passages of Miller's article that I will quote in regard to "positivism," science, technical writing, and suggestions for improving technical writing are just as notable for being further examples of her use of unstated assumptions, selective wording, selective sentence structure, and vague expressions.

CHAPTER II

MILLER'S TREATMENT OF SCIENCE

As I indicated in my introduction, "Humanistic Rationale" has been influential not only as an expression of social constructionism in general, but specifically as a source of attitudes about science: "Authors frequently cite Miller's definition of positivism, opposing it to descriptions of the social construction of knowledge . . ." (Smith 199) But her tendency toward over-generalization surfaces here as well. Miller's conception of science is doubly flawed because it **(A)** inaccurately labels a particular, monolithic view of science as "positivist" and **(B)** inaccurately assumes that all scientists and philosophers of science subscribe to that view.

(A) Positivism Vs. "Positivism"

One must first understand Miller's use of the term "positivism." She appears to use this term to stigmatize views of science that are less social constructionist than her own. And by extension, this stigma also attaches itself to all non-post-modernist views of science that are held outside of English departments, particularly by scientists. What is then ultimately left in Miller's view as expressed in "Humanistic Rationale" is a dichotomy between social constructionism and anything less relativist.

Social constructionists like Miller misrepresent science to their colleagues and their students by portraying scientists and some others as all-out "positivists." By using the term "positivism," social constructionists mean that scientists adhere to an unrealistic belief in their ability to be objective in their observations and to an unrealistic belief that an objective

reality exists. In addition to scientists, those who are not social constructionists in the humanities can be labeled "positivist" as well. As Patrick Moore put it in a controversial critique of Miller's "Humanistic Rationale," "The centerpiece of several essays that define technical communication as rhetoric is an attack on the alleged objectivity of technical communication . . . Miller [and others] think that people who believe that technical communication is objective are positivists, a philosophy that they maintain has long since been discredited." (Moore I 101)

But what is not clear from the social constructionist assumption is whether belief in the possibility of objectivity is actually "positivism," and if such a view is as unrealistic or discredited as Miller claims.

Here is Miller's definition of "positivism" from "Humanistic Rationale":

> Put simply, positivism is the conviction that sensory data are the only permissible basis for knowledge; consequently, the only meaningful statements are those which can be empirically verified. Sense data are correlated and systematized by logical (mathematical) means and culminate in lawlike generalizations. Scientific laws are thus nothing more than shorthand summaries of sensory observations. Theoretical terms, or mathematical symbols, must be explicitly defined in terms of sense data and are, in effect, abbreviations for phenomenal descriptions.
>
> Since sense impressions must initially be described in some language, much effort has been expended in the attempt to devise a pure "observation language," free of the emotion and metaphysics which pollute ordinary language. Ideally, scientific discourse would consist of "observation

> sentences" using only logical terms and observation terms, or of assertions using theoretical terms explicitly defined by reference to the observation terms. The culmination of this view of science and language was the attempt by Whitehead and Russell in *Principia Mathematica* to express the empirical content of science in the formulas of classical mathematics, to do away with ordinary language altogether and rely on the rock of logic. Korzybski's *Science and Sanity* and the General Semantics movement subscribe to a similar conviction.
>
> Such a view of science presupposes a mechanistic and materialistic reality. The goal of human knowledge is direct apprehension of that reality. Facts are self-evident entities existing out there in the real world—we have only to learn how to see them accurately or derive them logically. Objectivity on the part of the observer minimizes personal and social interference, reducing observation to the accurate recording of the self-evident; formal logic represents the underlying structure of mechanistic reality. Truth, then, is the correspondence of ideas to reality, and proof is the logical demonstration of that correspondence. Science, which arrives at proven knowledge, is that process of demonstration, proceeding in Cartesian fashion by logical deduction from the self-evident. (Miller 612)

The main problem with this definition is that it is not a simple matter at all to define the term "positivism," and I intend to show that Miller is making a gross over-generalization by labeling this monolithic viewpoint "positivist." For example, if one tries to find a basic, common usage definition of "positivism" by looking it up in *Merriam-Webster's Collegiate*

Dictionary (tenth edition) he will find three definitions: **(1a)** "a theory that theology and metaphysics are earlier imperfect modes of knowledge and that positive knowledge is based on natural phenomena and their properties and relations as verified by the empirical sciences", **(1b)** "LOGICAL POSITIVISM", and **(2)** "the quality or state of being positive." The earliest known date that the dictionary assigns to the term is 1847. (Mish 909)

If we can rely on Merriam-Webster's definitions, then we might be able to assume that Miller is referring to logical positivism, as definition **(1b)** indicates that "positivism" can be a synonym for logical positivism. Definition **(1a)** does not directly contradict Miller's definition, while it does not necessarily support it either.

To find a more field-specific definition of "positivism," one can consult the *Encyclopedia of Philosophy*, but instead of providing an entry, this source instead directs the reader to see entries for Isidore-Auguste-Marie-Francois-Xavier Comte, legal positivism, logical positivism, positivism in the social sciences, Russian positivism, and positivist thought in Latin America. (Encyclopedia of Philosophy 558)

Origins And Early Varieties Of "Positivism"

Since it is increasingly clear that defining "positivism" is a complex matter, it is not surprising to find Charles Frankel, writing in Vergilius Ferm's *A History of Philosophical Systems*, offering the following insight: "'Positivism' is a double-barreled word. It stands for a certain temper of mind as well as a particular system of philosophy (Ferm 329)." Irregardless of such complexities, however, "positivism" is indeed closely related to science: "The positivistic temper of mind is primarily interested in the solution of particular problems, one by one, rather than in the construction of elaborate world-views. The positivistic temper

of mind is thus more closely attuned to the sciences than to any other department of human civilization." (329)

And we have thus far barely even scratched the surface of "positivism." Here is Frankel again:

> When regarded as a temper of mind, positivism is recurrent in the history of thought. Indeed, it is older than philosophy itself, for it has its roots in the arts and crafts of daily life and the common sense of the farmer, the sailor, or the woodsman about the observable regularities of nature. Ancient as are its sources, however, positivism holds a peculiar and powerful place in modern philosophy. The distinctive intellectual influence in the modern world has been the natural sciences, and the so-called 'scientific outlook' is unmistakably positivistic in its affinities. . . . most of modern philosophy has been wrestling with the positivistic temper of mind, as though it could neither live with it nor without it. (330)

Frankel's next point is of especial interest in the context of the Manichean dichotomy that Miller uses: "The question of the interpretation to be placed on science, and the question of its bearing on human values, have been the most vexed issues of modern thought, and have given rise to a bewildering variety of philosophic schools of both a positivist and an anti-positivist persuasion."

This "bewildering variety" gives more reason to suspect that Miller is oversimplifying things. "Among these [philosophic schools], the so-called 'Positive Philosophy,' formulated by the French philosopher Auguste Comte (1798-1857), represents an extremely ambitious, and peculiarly paradoxical, attempt to synthesize the positivistic

temper, and to show that it should become the predominant temper of modern culture." (330) Though not the inventor of "positivism" itself, for we can clearly see that one person could not invent such a thing as "positivism," Comte seems to have invented the term. (Stockman 5)

Frankel elaborates on "positivism" *a la Comte*: "Comte's idea of science was a compound of ideas which the philosophers Hume and Kant had already made current in the eighteenth century. The basis of his system was a definition of science as the study of 'the laws of phenomena'—the invariable relations of coexistence and succession observed to hold between elements of experience. . . . observable phenomena were not necessarily exhaustive of reality, but were merely all the human mind was capable of knowing . . . In short, science tells us 'how' events take place, but not 'why': it describes but does not 'explain.'" (Ferm 330—331)

Comte's view is very much akin to Miller's description of "positivism." To abridge the above quotation from Miller: ". . . positivism is the conviction that sensory data are the only permissible basis for knowledge . . . Since sense impressions must initially be described in some language, much effort has been expended in the attempt to devise a pure "observation language," free of the emotion and metaphysics which pollute ordinary language. Ideally, scientific discourse would consist of 'observation sentences' using only logical terms and observation terms . . . Facts are self-evident entities existing out there in the real world—we have only to learn how to see them accurately or derive them logically." And so, if our language works well enough, we can usefully "describe" and not bother trying to "explain."

But although Miller has hit Comte's idea of "positivism" pretty well on the head, this doesn't mean that she has accurately described "positivism" more generally. "*As recent positivists have pointed out*, this distinction between scientific 'description' and 'explanation' is a misleading one, and *it has frequently been employed by anti-positivistic thinkers* to justify the subordination of scientific knowledge to some other, allegedly higher, form of knowledge" [emphasis added]. (331) I intend to demonstrate that Miller's article is one such case in point.

At least one other aspect of Comte is essential in relation to Miller's definition of "positivism": "His predominant concern with considerations of practical utility made him perfectly satisfied to restrict science to 'description' and to leave the matter there." Comte "was first and foremost a social reformer, and he was interested in science because he thought of it as an instrument for the reorganization of human life." Living after the horror of the French Revolution, Comte believed that a more regulated way of organizing French society was needed. He wanted to organize society according to a secular religion of "positivism." (331—332) T. H. Huxley would thus describe Comte's "positivistic" program as "Catholicism minus Christianity." (Copleston 134)

Therefore Comte—possibly the most commonly referred to person in the history of "positivism"—developed a philosophy that exhibits major differences with those of other "positivist" thinkers, before and after. The particular relevance of his plan of social organization is that it **(1)** contradicts other varieties of "positivism" and **(2)** it contradicts Miller's characterization of "positivism" as unhumanistic, as an ideology that would be allergic to social concerns. Miller writes in such a way that it seems as if no "positivist"

could actually have such concerns, and yet such concerns were central to the philosophy of Comte, arguably history's major "positivist."

That "positivism" is more varied than Miller would have us believe is further born out by examining Comte's impact on those who followed him. Claude Bernard (1813-1878) rejected Comte's "Religion of Humanity" and didn't believe that human beings could ever stop reflecting on metaphysics (which still did not in his view make metaphysics legitimate knowledge), but was convinced of experience being the only reliable method of knowledge-gaining. (Kolakowski 74—5) John Stuart Mill's (1806-1873) philosophy was also like Comte's in that it maintained the possibility of perfecting society. (78—79) Herbert Spencer (1820-1903) formulated a different type of "positivist" utopia by applying the biological concept of evolution to society as a whole with the intention of perfecting it. (Copleston 142—45)

The significance of the varied history of "positivism" is its contradiction of Miller's simplistic characterization of it. In sum, there is **(1)** great difficulty to be found in trying to pin down the precise origins of "positivism," **(2)** great difficulty to be found in trying to isolate it as a unified philosophical movement, **(3)** a great deal of philosophical difference between those individuals who might legitimately be called "positivist", and **(4)** definite signs of "social conscience," of a tendency that does not jell with Miller's characterization of positivism as unhumanistic.

"Positivism" In The Twentieth Century

Logical positivism is a philosophy that developed in Germany and Austria in the 1920s, coming to "its apogee" in the years before the rise of National Socialism. (Craig

789—90) And for a period of "over thirty years logical positivism . . . exerted near total dominance over the philosophy of science." (Suppe 617) It was perhaps not that much of an offshoot of Comtean positivism, because it developed from analytical philosophy, a system unique in the "stress it laid on the idea that philosophy must start with exact logical analysis of the language in which scientific questions are formulated." (Kolakowski 174) Analytical philosophy itself is not a "positivist" philosophy, but the logical positivist "current" of it was alleged to combine for the first time the "two rival methods of cognition in philosophy—the mathematical method of demonstration and the experimental method of investigation." (175—176) Logical positivism had appropriately "positivistic" characteristics, being nominalist, anti-metaphysical, and confident in the "essential unity of the scientific method". (177)

Herbert Feigl (1902-1989) was a member of the Vienna Circle, a group of philosophers who were collectively the main exponent of logical positivism in the world. Ludwig Wittgenstein and Rudolf Carnap were the main influences on the origins of the movement. (Achinstein 3) What is most relevant in Feigl's reminiscences about the beginnings of logical positivism, is his statement that "some aspects of logical positivism are derived historically from Hume and Comte; but, in contrast, especially to Mill's positivism, a new conception of logic (having its origins in Leibniz, Frege, and Russell) was united with the empiricism of Hume, Mach, and the early Einstein." (3)

This quote is another excellent demonstration that "positivism"—from its earliest appearances up to the logical positivism of the twentieth century—has been anything but a monolithic philosophy, evolving in an orderly manner to what Miller terms "its most extreme

expression" (Miller 612). And let the point be emphasized that "its most extreme expression" is how Miller specifically refers to logical positivism in her above-quoted definition. The quote from Feigl also indicates a problem with Miller's statement that in the "positivist" mindset, "the only meaningful statements are those which can be empirically verified" (612). It would be very interesting to see what Feigl would think of that statement, as he notes in the above quote that one of logical positivism's unique components was "the empiricism of Hume, Mach, and the early Einstein." (Achinstein 3) As it appears that Hume, Mach, and the early Einstein each had an empiricism, how can we be sure that empiricism is any easier to define than "positivism?" And how can we be sure that empiricism is the necessary component of "positivism" that Miller says it is?

But Miller makes more questionable uses of examples in her definition of "positivism." For example, here is her inclusion of Rene Descartes' method as a definitional component of "positivism": "Science . . . is that process of demonstration, proceeding in Cartesian fashion by logical deduction from the self-evident." (Miller 612) But here is Kolakowski on Descartes: ". . . Descartes can be called a positivist only with serious reservations. . . . in the eyes of Descartes, only that knowledge is valuable that does not merely tell us that something in fact takes place, but that something must necessarily take place. Such knowledge can be achieved, but by non-empirical methods, and according to him even existential judgments may have an analytic character, as evidenced by the ontological proof for the existence of God. This proof amounts to the assertion that God's existence is an *a priori* truth . . ." (Kolakowski 25) And here is Feigl: "They [the Vienna

Circle] were radically opposed to metaphysical speculation, especially of the *a priori* and transcendent types." (Achinstein 3)

For the logical positivists at least, Descartes' use of an *a priori* assumption about the existence of God would have been problematic at best. Given that an attitude of antipathy or indifference to metaphysics has characterized "positivism" throughout its many forms, it is possible to accept Miller's inclusion of Descartes' method in her definition of "positivism" "only with serious reservations."

Here is a further example of how Miller has over-generalized things: In her definition, she also says that the "culmination of this view of science and language was the attempt by [Alfred North] Whitehead and [Bertrand] Russell in *Principia Mathematica* to express the empirical content of science in the formulas of classical mathematics, to do away with ordinary language altogether and rely on the rock of logic." But there is again reason to believe that things are much more complicated than Miller allows: "Bertrand Russell . . . cannot be regarded as a positivist, if only for his emphatic rejection of nominalism. Alfred North Whitehead . . . was not a positivist by any standard." (Kolakowski 175) So there is at least that much disagreement with Miller's attempt to posit Whitehead and Russell's *Principia Mathematica* as the "culmination of this view of science and language" which she wants readers to consider "positivist."

The larger significance of all of these examples is that they again demonstrate how Miller over-generalizes by way of making inaccurate and unargued assumptions. In the examples analyzed in this section, and throughout this chapter, she is making these

assumptions about "positivism," and doing so allows her to create an easily identifiable "bogey man" against which she can contrast her own social constructionist views.

Usage Of The Term "Positivism" Today

We have seen that Miller's definition of "positivism," while thoroughly explained, takes a far too simplistic view of the complex reality of its subject. But I have so far concentrated on how Miller describes a particular view of science as "positivism" by showing that the history of "positivism" contains much to contradict Miller's simplistic portrayal. I now wish to deal with the word "positivism" as it is generally construed. By this I mean the common connotations of the word, and how it is generally treated by academics and intellectuals in the second half of the twentieth century to the present:

> In these less enlightened times, a positivist is not a nice thing to be, and nobody will own up to being one. The term, however, has clearly not gone out of currency; if anything, it has greater currency now than ever before. It has become, far from a form of self-identification, an accusation: successfully to charge another writer with positivism has become almost a knock-down argument. (Stockman 3)

These words were published in 1983, only four years after Miller's "Humanistic Rationale" was published. Has this overwhelmingly derogatory connotation of the word come about as a result of Miller? Unlikely, as the same source quotes the following 1974 statement from Anthony Giddens: ". . . the word 'positivist', like the word 'bourgeois', has

become more of a derogatory epithet than a useful descriptive concept, and consequently has been largely stripped of whatever agreed meaning it may once have had." (Stockman 3) Indeed, this fear of disrepute from the "positivist" label is what prompted the Vienna Circle to later rename their ideology "logical empiricism." (3)

And so one must consider the implications of "positivism's" highly negative reputation: Miller has used the term "positivism" in a context in which it was loaded down with negative connotations to begin with. It is therefore very easy to understand how a reader of "Humanistic Rationale"—especially if that reader shared Miller's social constructionist assumptions—could go right along with its unceasing attack on "positivism." For that matter, half of Miller's opinion *is* just that the alleged "positivist" legacy is a negative thing. If one begins reading by sharing the assumption that "positivism" is outdated and ridiculous, that "successfully to charge another writer with positivism has become almost a knock-down argument," it could be very easy to agree with the rest of "Humanistic Rationale."

It is all the more hard to believe that "Humanistic Rationale" was written in an intellectual environment amenable to "positivism" when one considers examples such as Stockman's recounting of two British Marxists in the late 1940s (Alfred Sohn-Rethel and Maurice Cornforth) "arraigning each other on the count of most heinous positivism in the pages of *Modern Quarterly*." (4) And any further belief that scientists and philosophers since the era of logical positivism (or logical *empiricism*) think of themselves as "positivists" is made equally unbelievable when we consider that

> . . . it is no longer possible to identify positivism through the self-identification of its adherents, since it has none. One solution to the problem thus posed, of how the term is to be used to characterize writers and their ideas on the assumption that such writers will not accept that characterization of their ideas, is politely to decline the challenge and abandon the use of the term except in quotation marks (Platt, 1981). This is perhaps by far the most prudent course to take. Braver or more reckless souls, however, will not be satisfied with this and will attempt, as Giddens puts it, "to impose some order upon the flux of different usages." (1974, p. 2) Given the contentious nature of any given application of the terms "positivist" and "positivism," it is precisely here that the problems start. (4)

The problems in "Humanistic Rationale" do indeed begin with the use of the terms "positivist" and "positivism," and there is not one usage of them surrounded by incubatory "scare quotes" in the entire article. Based on the contents of "Humanistic Rationale," it seems that Miller wants readers to consider "positivism" as an active word, one that represents a still-active philosophy. And this misuse lies at the very foundation of Miller's entire article, making the whole structure crumble. For if readers cannot take seriously her notion of a supposedly dominant "positivist" legacy, then there would be no need for a "humanistic rationale" to be brought in to the technical writing field. There would no problem to be corrected, and therefore possibly no purpose for the article's existence.

(B) Philosophers Of Science & Working Scientists

Inseparable from Miller's mistaken assumptions about the meaning of the word "positivism" is her assumption that the view she calls "positivist" is dominant in philosophical and scientific circles, that all or nearly all philosophers of science and working scientists subscribe to it. The complex reality that awaits anyone wishing to understand "positivism" behooves us to think twice before assuming that all philosophers and scientists subscribe to any particular philosophy of science.

A useful way of understanding how Miller's assumption is flawed can be found by first considering her seventeenth paragraph. In her second sentence, Miller has this to say about the "positivist view of science":

> Among the major objections to the theory are the complete failure of attempts to devise an observation language, the inability of theoretical terms defined as summaries of known effects to account for new effects observed later, the failure to account for the growth and change of scientific knowledge, and the serious limitations of logical systems. (Miller 615)

At the end of that sentence, Miller has a reference note. The work that she has referenced is *The Structure of Scientific Theories*, second edition, by Frederick Suppe. Suppe's book has some extremely interesting things to say in the context of the rest of Miller's paragraph. But let us first continue with Miller's next sentence:

> In addition, a new epistemology, based on modern developments in cultural anthropology, cognitive psychology, and sociology, has challenged the positivist conception of knowledge. This new epistemology makes human knowledge thoroughly relative and science fundamentally rhetorical. (615)

This is quite a leap, especially considering that Miller does not prove (or even argue) in her article that human knowledge is at all relative (let alone thoroughly) or that science is at all rhetorical (let alone fundamentally). Note also that Miller has again set things up in terms of a cut-and-dried dichotomy: the bad "positivist" view is righteously overturned by the good "new epistemology." Considering just how complex the history of "positivism" is, Miller would need to do much more than just rely on assumptions if she would give readers good reason to accept this simplistic, black-and-white characterization. But, in conformity with the rest of the article, she does not.

However, something else is going on here that is very interesting. As mentioned above, Miller has used Suppe's *The Structure of Scientific Theories* as a reference in support of her enumeration of the shortcomings of what she describes as "positivism." She does not, however, reference Suppe in support of her favorable characterization of the "new epistemology." And when reading the following paragraph from Suppe's "Afterward"—out of the very same edition that Miller references—her selective use of his book as a reference is very interesting indeed:

> During the last five or six decades there have been important shifts in philosophical thinking about scientific discovery and the growth of scientific knowledge. The positivists distinguished the context of discovery and the context of justification, dismissing the former as the subject of history or psychology. The only aspects of the growth of scientific knowledge relevant to philosophy were the inductive justification or confirmation of knowledge claims and the incorporation of older theories into more comprehensive theories via intertheoretic reduction. The resulting view of scientific

> knowledge was a static one which, ignoring the dynamics of scientific progress and being tied to an untenable observational/theoretical distinction and associated epistemology, led to a highly distorted portrait of science and the knowledge it provided, which had little to do with the epistemic activities science actually was engaged in. Rejecting such a view, a group of "young Turks"—including Hanson, Feyerabend, and Kuhn—started examining scientific practice and the history of science and developed *Weltanschauungen* views that, unfortunately, made scientific knowledge a social phenomenon in which science became a subjective and, to varying degrees, an irrational enterprise.
>
> More recently philosophers such as Lakatos, Toulmin, and Shapere have attempted to steer a middle course between these two extremes wherein science is a rational enterprise concerned with obtaining objective knowledge of the real world. (Suppe 704—705)

Let us first pause and reread the end of that last sentence: ". . . a middle course between these two extremes wherein science is a rational enterprise concerned with obtaining *objective knowledge* of the *real world.* [emphases added]" Suppe might agree with Miller that there was once a "positivist" extreme in philosophy and/or the sciences, but he also characterizes Miller's type of view as the opposite and equally inaccurate extreme. His example of the new middle ground is exactly the kind of non-"positivist" belief in objectivity and in the existence of external reality that Miller assumes out of existence in her above dichotomy (and throughout the article). She has selectively used him as a reference for

historical background, but completely ignored the larger scope of the work she quoted. Suppe is unlikely to be supportive of Miller's view, which she says "makes human knowledge thoroughly relative and science fundamentally rhetorical."

But the larger significance of the above quote from Suppe is that it severely damages the credibility of Miller's assumption of all scientists and philosophers of science subscribing to what she has termed "positivist." Suppe points out in the above quotation that some recent philosophers hold views that are between "positivism" and Miller's kind of view. But let us understand the very important details of this point more clearly:

> **"Positivism" is no longer widely adhered to.** In a section entitled "Swan Song For Positivism", Suppe states that ". . . the last vestiges of positivistic philosophy of science are disappearing from the philosophical landscape—as is well testified to by Carl G. Hempel's recent public lectures where . . . he increasingly has been calling into question more and more of the positivistic program and the products of his earlier efforts on its behalf." (619)

And so Miller is assuming a lot about "positivism" that is contradicted not only by its complex history and its currently negative connotation, but also by Suppe's claim that "the last vestiges of positivistic philosophy of science are disappearing from the philosophical landscape".

> **Views like Miller's are no longer widely adhered to.** In a subsequent section entitled "The Waning of the *Weltanschauungen* Views", Suppe states ". . . key tenets of these various *Weltanschauungen* analyses came under increasingly heavy attack by a number of authors . . . these attacks had been sufficiently effective that many philosophers of science were questioning the

> very tenability of these *Weltanschauungen* approaches. . . . Contemporary philosophy of science, although strongly influenced by these *Weltanschauungen* views, has gone beyond them and is heading in new directions. The *Weltanschauungen* views, in a word, today are *passe*, although some of their authors continue to develop them and they continue to be much discussed in the philosophical literature. (633—34)

In an earlier quotation, Suppe identified Kuhn, Feyerabend, and Hanson as exponents of the *Weltanschauungen* views, and Miller references Kuhn on more than one occasion in "Humanistic Rationale." Miller relies on the philosophers of science whose views are labeled "*passe*" by Suppe in order to give some philosophical and scientific credence to her social constructionist opinions. And in Miller's dichotomy, where *Weltanschauungen* is good and "positivism" evil, there is no middle ground. Yet Suppe states above, "Contemporary philosophy of science, although strongly influenced by these *Weltanschauungen* views, has gone beyond them and is heading in new directions." There is then, a path between Miller's extremes in the philosophy of science, though she assumes it out of existence.

Lest we be without an idea of what the new middle ground is, Suppe goes on to note "the emergence of scientific realism as what is becoming the dominant philosophical approach to understanding science." (634) And so this is more evidence against the idea that many philosophers of science adhere to "positivism" (or, for that matter, it's *Weltanschauungen* opposite). Is it any more likely that scientists themselves are any more inclined to "positivism?" We already know that we must be cautious in making assumptions when dealing with something as slippery as "positivism," and there is at first glance little

reason to think that working scientists would more likely be "positivist" than philosophers of science. Looking at a few examples of working scientists confirms this suspicion.

First consider Richard Feynman (1918-1988), Nobel prize-winning physicist. Feynman had this to say in a lecture on quantum electrodynamics: "The theory of quantum electrodynamics describes . . . all the phenomena of the physical world except the gravitational effect . . . and radioactive phenomena. [It] describes nature as absurd from the point of view of common sense. And it agrees fully with experiments. So I hope you can accept Nature as She is—absurd." (Feynman 10) This quality of absurdity, of common sense not being a useful criterion in this case, does not jell with the orderly absolutism of what Miller terms "positivism". Yet the same Feynman agrees in an interview that there are "definite rules for the world." (Brian 48)

Another example is biologist Ulf S. von Euler (1905-1983), whose "quantitation of the body's response to noxious agents by catecholamine analysis clarified the relationship between various kinds of physical and mental stress and the activity of the sympathroadrenal system," and who has received the Carl-Ludwig medal, among other awards. (Gabbiani 45) Here is a quotation from von Euler, published in 1967:

> If relatively few scientists today speak freely and open-heartedly about the mental processes underlying their research and results—in contrast to the artists who are often less hesitant in this respect—one reason for this reserve may be sought in a wide-spread opinion that scientists should maintain the fiction of a rationally operating mind. This may be and should undoubtedly be so when it comes to the "development work." But, there is still little doubt that many important findings are made with little aid of logical thinking, but

> rather appear as the result of happy circumstances. It is not without reason that the Portuguese word for research is "pesquisas," meaning "fishing," and why should a scientist not be as fortunate sometimes as the princes of Serendip? Again, the observant eye and alertness in applying the proper associations are most helpful qualities. (47)

Here is a clear admission of the importance to science of randomness, of chance, of pursuing ideas that are not arrived at rationally. Von Euler is another scientist who does not fit Miller's notion of what scientists believe.

And for a third example of a scientist, here is physicist Stephen Hawking (1942-), in an excerpt from his general audience bestseller, *A Brief History of Time*:

> Today scientists describe the universe in terms of two basic partial theories—the general theory of relativity and quantum mechanics. They are the great intellectual achievements of the first half of this century. The general theory of relativity describes the force of gravity and the large-scale structure of the universe, that is, the structure on scales from only a few miles to as large as a million million million million (1 with twenty-four zeros after it) miles, the size of the observable universe. Quantum mechanics, on the other hand, deals with phenomena on extremely small scales, such as a millionth of a millionth of an inch. Unfortunately, however, these two theories are know to be inconsistent with each other—they cannot both be correct. One of the major endeavors in physics today, and the major theme of this book, is the search for a new theory that will incorporate them both—a quantum theory of gravity. (Hawking 11—12)

Here we have one of the world's leading scientists telling us of how the universe is described by two theories that are at present incompatible. No "positivist" as Miller defines the term could be comfortable with this rather unresolved situation.

In fairness to Miller, there is no possible way that she can know what all scientists think. But that is precisely the point of these examples: Miller *does* write as if she knows what all scientists think when she makes sweeping and unproven assumptions. She assumes that all or almost all scientists share the view that she terms "positivist," and provides no evidence for this assumption. The examples of Feynman, von Euler, and Hawking each contradict Miller's assumption.

But finally, we must consider the generally stereotypical way in which Miller portrays scientists and—as with all sweeping generalizations—at least suspect that it is not universally true. Paul R. Gross and Norman Levitt put it most eloquently in their book *Higher Superstition*:

> On the whole, scientists are deeply cultured people, in the best and most honorable sense. The image of the scientific monomaniac, of scientists devoted to "naïve scientism," is, to say the least, highly misleading. The range of knowledge of music, art, history, philosophy, and literature to be found in a random sample of scientists is, we know from long experience, extensive, and in some fortunate venues enormous. Most of this learning has been acquired, of necessity, at odd moments here and there—not through formal or systematic study. As humanists, therefore, scientists are autodidacts. One obvious consequence of this fact is to undercut the argument that traditional humanities departments, in their role as educators, are

> indispensable bearers of the great treasures of our cultural heritage. There are other, albeit less efficient, routes to erudition. (Gross 243)

This quotation from Gross and Levitt cuts to the very heart of Miller's article. Just as it is essential for her argument that readers believe in an alleged "positivist" legacy, it is essential that they also go along with the idea of scientists as cold, unemotional, and incapable of interest in anything that cannot be expressed mathematically. Without that stereotypical image of the scientist there is even less reason to believe Miller's assumption that technical writing is currently an unhumanistic practice, and that there is a need for it be humanized in some way. Note that Gross and Levitt directly describe scientists as "humanists" and state that the humanism of scientists "undercut[s] the argument that traditional humanities departments, in their role as educators, are indispensable bearers of the great treasures of our cultural heritage." Thus it could be argued that scientists might themselves be well equipped to provide humanistic rationales for their own work, and perhaps for other areas of human endeavor. Perhaps even a humanistic rationale for technical writing—if we may assume that one is needed.

CHAPTER III

MILLER'S TREATMENT OF TECHNICAL WRITING

A highly significant aspect of Miller's article is that it **(1)** is directly concerned with technical writing while it **(2)** does not directly deal with technical writing very specifically at all. The title of the article, after all, is "A Humanistic Rationale for Technical Writing" and therefore the article's subject (the "humanistic rationale") is relevant only so far as it applies to technical writing. It is therefore crucial to the case which Miller makes that she establish that this "humanistic rationale" which she develops does indeed apply to technical writing.

Miller's establishment of this link occurs in her first and second paragraphs, which I examined in some detail in my first chapter. This is where Miller recalls an English department meeting where technical writing instructors were dumbfounded by the desire of others in the department to not allow students to use a technical writing course to fulfill a humanities requirement. Technical writing can be considered humanistic, Miller says, so long as the "positivist" legacy which she alleges to exist and to be dominant is jettisoned in favor of something new.

But as I demonstrated in my previous chapters, Miller does not ever prove or even argue **(1)** that this alleged "positivist" tradition exists, **(2)** that it is actually "positivist," or **(3)** that it is as dominant as she assumes it to be. And throughout most of the article, Miller just attacks the alleged effects of the supposed "positivist" tradition, generally not addressing technical writing head-on. The article eventually comes full circle, culminating in a closing section where Miller explains how technical writing can be believably considered humanistic. As I intend to demonstrate in my fourth chapter, the advice that she gives

continues the article's pervasive tendency toward over-generalization and, in its relentless vagueness, does little to cement the link between the "humanistic rationale" and technical writing.

In this chapter I will look at those sections of "Humanistic Rationale" where Miller does directly address technical writing. Where she does so, her over-arching tendency to over-generalize is as prevalent as it is elsewhere in the article. And one very important aspect of Miller's over-generalizing is that while she **(1)** picks apart some others' definitions of technical writing, she **(2)** does not bother to define technical writing herself. This lack of a definition repeatedly undermines her attempts to write authoritatively on technical writing.

Miller's main look at technical writing begins in her eleventh paragraph: "I want to discuss four features of technical writing pedagogy which seem to me to illustrate problems due to this positivist legacy: unsystematic definitions of technical writing, emphasis on style and organization, insistence on certain characteristics of tone, and analysis of audience in terms of 'level.'" (Miller 613) I will analyze Miller's discussion of these four features one at a time; my comments will be interspersed between quotations from the article.

(A) Unsystematic Definitions

Here is the beginning of Miller's twelfth paragraph:

> Definition of the subject has been a continuing problem in the teaching of technical writing. The textbooks and pedagogical literature are rife with attempts, all very similar and none very satisfactory. Definition based on content seems at first obvious and then unworkable—no one is prepared to say which subjects are "technical." Engineering, certainly; science, of course; but

> linguistics? political theory? seventeenth-century music? urban planning? Reality doesn't come in packages clearly marked "technical" or "nontechnical." (613)

It is true that reality does not come in neat packages, but that fact does not mean that such labelings of reality should be abandoned; it does not prove that they are useless for technical communicators. And though Miller never provides a definition of technical writing, it is true that she is not willing to drop the neat package of making a technical/non-technical distinction. She does not opt to call technical writing something else, although she notes that ". . . perhaps any aspect of reality might be treated in a technical or nontechnical manner." (613)

But it is easily arguable that some subjects are much more important to students in technical writing classes than others. In contrast to the leveling in the relative importances of the subjects that Miller itemizes, some topics may have more validity in a technical writing class than others because some of them relate more closely to what students will be doing after graduation. Technical writing relating to engineering, for example, will likely be relevant to far more students than technical writing relating to seventeenth-century music.

It is of course not necessarily the case that technical writing must be defined in this more strict sense, relating very closely to what most students will likely be doing in the working world. Indeed, at least one popular textbook defines technical writing in a very inclusive manner:

> Although certain professions such as engineering have traditionally been associated with technical communication, nearly every discipline and profession has technical documents, visuals, and oral presentations. For

> example, detailed information about sound formation is important for both a speech pathologist and a computer engineer designing a voice synthesizer. Knowledge about muscle conditioning is equally relevant to physical therapists, ballet dancers, and veterinarians. Data about weather changes are crucial to both the meteorologist and the commercial fisher. (Burnett 5)

Does Miller agree with this view of technical writing? Perhaps so, but it is impossible to say for certain, as Miller never tells readers what her view of technical writing is. The point of the textbook example and of my own devil's advocate argument is that there are different ways one can define technical writing, and Miller has really not expressed any of them. One could assume that Miller's definition is something more like the Burnett definition, but there is no way of knowing for certain.

> To return to the window-pane analogy, definition in terms of the window itself may be more promising than definition in terms of what is outside. Such definitions often take the form of an appeal to absolute clarity, but clarity is a more elusive and less useful criterion than we have believed. It provides no way to distinguish poorly executed technical writing from writing that is not technical writing. For instance the prose that many people find least clear, and which is the subject of much popular complaint these days is writing that few would hesitate to call "technical"—government reports, sociological studies, insurance policies. Clarity is not a useful criterion especially if technical writing fails the test more often than other types of writing. Our definitions of technical writing leak badly. How can we teach a course, let

> alone develop a field of study, when we have no way to tell anyone what our subject matter is? (613—614)

Miller's argument against clarity as a criterion is more misleading and less convincing than she seems to believe. It is first of all not so obvious that most would think of "government reports, sociological studies, [and] insurance policies" as technical writing. She provides no evidence for this contention and, what is more, it is not difficult to think of examples which contradict Miller, examples may be just as easy to believe in the context of an argument without evidence.

For example, why does a government report necessarily fall into the technical writing category? There are first of all many different types of government reports in the United States, because of the miscellany of branches which compose the U.S. government. The situation is not dissimilar in Canada, the United Kingdom, and many other nations. Therefore, one problem with calling government reports technical writing is that there are so many varieties of these reports that it may be inaccurate to assume that all of them are examples of technical writing (unless our definition of technical writing is very, very inclusive).

Secondly, the nature of a report is that of providing information on a subject without necessarily requiring any action on the other reader's part beyond reading. In essence, instructions are documents which specifically tell readers how to do perform particular tasks while reports do not necessarily perform that function. And so if our definition of technical writing was such that we believed that all technical writing is writing which instructs a reader on how to accomplish specific tasks, we may not believe that any report (government or otherwise) falls under the category of technical writing.

This is not to say that such a view of technical writing, reports, and instructions is the correct one, but it certainly is a possible one, and Miller does not allow for it when she assumes that government reports are a type of writing that "few would hesitate to call 'technical.'" This is yet another variation on Miller's theme of over-generalization by assumption and, like her lack of a definition for technical writing, it undermines the effectiveness of her statements on technical writing.

It is also interesting that Miller refers in the above quotation to "absolute clarity": the implication is that those who believe in clarity can or will only have their clarity if it is absolute and without ambiguity. Here she makes another over-generalization, done this time by assuming out of existence the possibility of a middle ground between absolute clarity and absolute opacity. As my earlier chapters attest, this is also not the first time that Miller sets things up in a black-and-white dichotomy with no allowance for the possibility of moderation.

Miller says that clarity "provides no way to distinguish poorly executed technical writing from writing that is not technical writing." This is a very curious way of putting it, because it is not clear why we should be concerned with making the distinction between "poorly executed technical writing" and "writing that is not technical writing." The distinctions that might concern us are technical/nontechnical writing and good/poor technical writing. Miller has not provided us with a reason for why a direct comparison between bad technical writing and non-technical writing is so important, but this apples-and-oranges comparison does allow her to create a stronger *impression* (but not an argument) that clarity is not a useful criterion by giving the reader a "for instance" in her very next sentence.

But this example does not prove her point: ". . . the prose that many people find least clear, and which is the subject of much popular complaint these days is writing that few would hesitate to call 'technical'—government reports, sociological studies, insurance policies." The fact that there are examples of technical writing out there that most people would consider unclear, does not so obviously mean that the clarity criterion is a failure. Samples of poor technical writing may be evidence that writers are working without any regard to clarity, rather than evidence that writers are trying too hard to be clear. It is very possible that the writers of unclear documents do not follow any guidelines for clarity, but Miller does not allow for this possibility.

Miller contends that the current definitions "leak badly," an odd choice of words which illuminates an interesting aspect of her viewpoint. Miller on the one hand decries the alleged "positivist" tradition which—with its supposedly rigid, inflexible, coercive ideology—she believes has harmed technical writing. But on the other hand she finds that technical writing under the sway of this tradition has not been quite rigid enough: after all, if "our definitions leak badly" because they are "unsystematic" then it stands to reason that Miller wishes them to be more systematic, i.e. at least a little bit *more* rigid. But this apparent contradiction in one part of Miller's view is not explicated, but rather glossed over as her article moves on to further over-generalizations.

(B) Style And Organization

This is the beginning of Miller's next (and thirteenth) paragraph:

> The second feature of our teaching that creates a problem is the emphasis on form and style at the expense of invention. The collapse of invention as a

> rhetorical canon is complementary to the rise of empirical science. If the subject matter of science (bits of reality, inartistic proofs) exists independently, the scientist's duty is but to observe clearly and transmit faithfully. The whole idea of invention is heresy to positivist science—science does not invent, it discovers. (614)

Miller continues to over-generalize, and to over-generalize in some of the same ways she does elsewhere in the article. **(1)** Miller does not actually tell us *why* it is such a problem that form and style have allegedly been privileged over invention. **(2)** She offers no evidence for her contention that the "collapse of invention as a rhetorical canon is complementary to the rise of empirical science." **(3)** Even if there were evidence to support this claim, the fact remains that *correlation* does not equal *causation*. In essence: invention may collapse and empirical science may rise, but that does not prove that one incident caused the other, or that they are even connected in any way.

(4) Her usage of the term "empirical science" is problematic because it seems that she may be using "empirical" interchangeably with "positivist". She does not refer to empiricism in very many places elsewhere in her article, and does not define it in itself as she does with "positivism." But as I have demonstrated in Chapter II, it is unwise to make sweeping generalizations about "positivism" and so it seems no wiser to make generalizations about empiricism, particularly when it may be conflated with "positivism." **(6)** Miller is once again making a highly generalized and unproven assumption about scientists: by saying that "the scientist's duty is but to observe clearly and transmit faithfully", she assumes away the role in science of analysis, interpretation, and discussion, activities which often come before conclusions in many (and perhaps all) fields of endeavor.

(7) The very idea of invention may not be so "heretical" to scientists as Miller claims. She states above that the "collapse of invention as a rhetorical canon is complementary to the rise of empirical science . . . The whole idea of invention is heresy to positivist science—science does not invent, it discovers." But scientists have discovered things (such as Newton's three laws of motion) and they have also used the knowledge gained from discoveries to invent things (such as the process of pasteurization). So although it may be true that scientists do not have much use for "rhetorical invention," it is arguable that Miller is mistaken when she says that invention as a general concept is "heresy" to science, "positivist" or otherwise.

But it is interesting that Miller chooses the word "heresy": the connotation for most readers cannot likely be other than that of science as a vast, controlling orthodoxy, intolerant of opinions which fall outside its unyielding belief system. Miller once again could have chosen a relatively neutral word (such as "antithetical") but instead opted for a highly connotative one.

But there is yet another issue here, suggested by Miller's passage about "invention." It seems to me that Miller conflates two things somewhat in this passage, rhetorical invention and invention as a general concept: "The collapse of invention as a rhetorical canon is complementary to the rise of empirical science. . . . The whole idea of invention is heresy to positivist science—science does not invent, it discovers." As I argued above, the concept of invention cannot be relegated away from science as absolutely as Miller would like, because of the fact that scientists have demonstrably invented things. But Miller is perhaps even more concerned about scientists ignoring *rhetorical* invention, and so one must consider the

question of **(1)** what rhetorical invention is and **(2)** why scientists should be concerned with it.

When one engages in rhetorical invention, one is creating arguments or other persuasive language. But if one believes in an objective reality, as scientists reputedly do, then one does not necessarily always write to persuade. If a scientist writes a description of the color and shape of a micro-organism that she views under a microscope, she is not trying to *persuade* readers about anything so long as she is actually referring to an objective reality when she writes her description.

But if this reality does not exist objectively, if it is a social construction that has no existence outside of language, then all human communication could be considered persuasive in nature. Because Miller so consistently criticizes scientists for their belief in an objective reality, it is therefore not surprising that she would criticize them for allegedly turning away from rhetorical invention.

> Form and style become techniques for increasingly accurate transmission of logical processes or of sensory observations; consequently, we teach recipes for the description of mechanism, the description of process, classification, the interpretation of data. And, as one text indicates, stylistic problems are understood to result from the complexity of technical subject matter: the intricacy of that reality out there makes it difficult for me to transmit it accurately, to make my windowpane sufficiently transparent that you may see the details clearly. (614)

Miller's contention that increasingly difficult material is increasingly difficult to clearly write about makes sense. But she does not offer any reason for why this would mean

that form and style should *not* conform to the need for clarity. After all, it seems reasonable that a writer may adjust her style in order to make sure that the technical information to be conveyed is as clear as possible. Patrick Moore illustrates this argument well when he makes a distinction between what kinds of writing rhetoric and instrumental discourse are:

> . . . when technical writers use language instrumentally (as in the design of a human/computer interface), they are more cautious about limiting the interpretations and overtones of their words. But when the purpose of a technical communication is rhetorical (as in a proposal or technical sales document), writers can use language with more connotations, emotional associations, and potential ambiguity. (Moore I 108)

If the writing is not clear enough, it may be impossible to operate a computer, install a car part, or know what to do in an emergency situation. The problem of increasing complexity is arguably an excellent example of why clarity is essential, not an example for the opposite case. Miller provides no reason to believe otherwise.

> If we take this approach to form and style very seriously, there is not very much to teach in a technical writing class. Form and style become, in theory, as self-evident as content. No wonder that technical writing is a course that anyone can teach and no one wants to teach. But why is it that students have difficulty writing effective prose if all they are doing is transmitting a reality about which they know more than the technical writing teacher? (614)

Miller assumes here that writing clearly is easy, that when taking "this approach to form and style very seriously, there is not very much to teach in a technical writing class." But why does she make this assumption? It is just as arguable that it takes a great deal of

training and practice in order to generate clear and precise technical writing that fulfills its purpose. Indeed, the view that Miller expresses seems counter-intuitive and untenable to this writer: technical writing classes that emphasize clarity and de-emphasize style are not classes that "anyone can teach" as students usually "have difficulty writing effective prose" because they are not born prodigies; rather, they need the proper education and practice with which to become proficient. There may be a convincing argument for the view Miller expresses, but she does not provide it.

(C) Tone

Miller next starts a new paragraph on what she sees as another pedagogical problem:

> A third problematic feature of our teaching is the insistence on certain characteristics of tone: be objective, be unemotional, be impersonal. These injunctions directly implement the positivist epistemology. (614)

Miller follows a familiar pattern here: she does not prove that teaching is currently dominated by these characteristics of tone, but assumes that such is the case. In order to demonstrate what is bad about the situation, she tells us that these "injunctions directly implement the positivist epistemology." However, she never actually proves or even argues for this point; it is simply assumed to be true.

> But technical writing teachers are consequently always grappling with the dilemma that English syntax does not handle impersonality very gracefully. (614)

This may very well be the case, but Miller does not provide evidence to support this contention. Among other things readers may wish to have established: by what standard are

languages evaluated for the ability of their syntax to gracefully handle impersonality? There are many languages in the world, and Miller does not explain which languages English should be compared to and in what ways.

> Under the sway of positivism, scientists adopted as conventions the obvious stylistic means for staying out of the way of the subject matter—third person constructions, personifications, passive voice. (614)

Miller again says something about scientists without actually having proven it, while providing another example of one of her most frequently recurring over-generalizations: "the sway of positivism." And it is also problematic that Miller terms "third person constructions, personifications, [and] passive voice" to be the "obvious" choices for creating impartiality. The best choices they very well may be, but the obviousness of it is not necessarily so obvious. One can write with a sense of objectivity and lack of emotion while using the first person. Use of it does not automatically indicate the writer's voice is full of intense emotion and strong opinion. In the same way, one does not have to use passive voice in order to sound impersonal; it may be easier to do so, but it is not the only (or necessarily best) way.

> Does it make sense to place a double burden on students by urging them to be impersonal on the one hand, but denying them, in the name of stylistic grace, these obvious syntactic tools on the other? (614)

Miller assumes that students are being denied something, and in so doing is allowed to come across as sensitive and concerned; uncritical readers may be more inclined to agree with what she says here and less inclined to notice that her point is not quite clear (or proven). She says that students are required to be "impersonal" while they are not allowed to take advantage of "these obvious syntactic tools." But she does not state anywhere that

students are being denied the use of third person, etc. She only indicates that English does not handle these agents of impersonality well. This is, in sum, another place where Miller has just not been specific and clear enough.

(D) Audiences And Levels

Miller's last pedagogical objection:

> The fourth feature which our teaching owes to positivism is the tendency to analyze audiences in terms of "levels," as though we are concerned with how tall they have to be to look out of our window. Some audiences are capable of seeing some aspects of reality; others are more capable and can see more. Technical writing is sometimes characterized by its particular concern for audience analysis, but the positivist legacy encourages us to analyze only the relationship between the reader and the reality (and whether the reader is mentally adequate to the reality). As a result, audience adaptation too often becomes an exercise in vocabulary. (614—615)

Again Miller greatly over-generalizes. She does not refute the possible necessity of levels at any point; rather, she makes them appear to be ludicrous with her analogy involving peering out a window. Miller also implies that rating audiences in levels is an elitist, anti-egalitarian activity: "Some audiences are capable of seeing some aspects of reality; others are more capable and can see more." What is interesting about this sentence is the combination of three things:

(1) It is true that some audiences are more capable than others.

(2) Miller states this fact in such a way that it seems as if it is ridiculous to believe it, that it must not be true, but provides no actual argument against it.

(3) But accepting the fact that different audiences are more capable than others does not require an acceptance of a more capable audience being intellectually superior. For example, an audience well-equipped to understand Old English texts may not be well-equipped to understand technical instructions relating to the repair of air conditioners, and vice-versa. It is an unavoidable fact that not all people are at the same reading level, not all people have the same level of interest or ability in a given subject, and so there are unavoidably different audience levels for various subjects. There is not necessarily any overall superiority or inferiority about the people who fall into these different levels.

This is the conclusion of Miller's paragraph:

> If audience adaptation is to be central to technical writing, we need broader and more flexible methods which will permit analysis of the relationship between the writer and the reader. For we have not said anything very useful about the writer-reader relationship when we say that the purpose in technical writing is to be clear. Why has it been so difficult in a technical writing class to talk about the relationship between writer and readers and the reasons for saying anything about a subject in the first place? (615)

Miller says in the first sentence of the above passage that things must be "broader and more flexible". This certainly gives the sentence a nice, tolerant, open-minded ring, but it is

another over-generalized dead end since Miller never elaborates on *how* things can become "broader and more flexible". The second sentence in the above passage is also highly questionable: we have arguably said something *very* useful about the writer-reader relationship when we have affirmed the need for clarity. As was previously pointed out, technical writers who do not try to be as clear as possible are of little worth (and may even be dangerous) to their readers. The third sentence in the above passage is over-dramatic and underhanded: it begins "Why has it been so difficult . . ." without going to the trouble of establishing that it really *has* been difficult. How can one agree or disagree with a statement phrased in this way?

Technical Writing Textbooks

Early in the article, Miller opines on "some common notions about technical and scientific rhetoric" by commenting on a quotation from the article "How Rhetoric Confuses Scientific Issues," by Barbara G. Cox and Charles G. Roland. (Miller 611) Miller claims that the article espouses a view in which "science and rhetoric are mutually exclusive" and that "technical writing textbooks are suffused with this view of both science and rhetoric." (611) The quotation Miller uses may be supportive of her claim, but her use of it is problematic. While the authors do state that "rhetoric should be avoided assiduously in scientific writing" they never say anything as absolute as Miller's contention that they believe that "science and rhetoric are mutually exclusive." (611) But far more importantly, Miller does not prove her contention that "technical writing textbooks are suffused with this view of both science and rhetoric." She offers what are supposed to be

> Some typical examples: "Technical writing is expected to be objective, scientifically impartial, utterly clear, and unemotional. . . . Technical writing is concerned with facts and the careful, honest interpretation of those facts." Another: "Since technical writing is by definition a method of communicating facts it is absolutely imperative to be clear. . . . The point of view should be scientific: objective, impartial, and unemotional." And again: "Technical communication has one certain clear purpose: to convey information and ideas accurately and efficiently." And finally: "Because the focus is on an object or a process, the language is utilitarian, emphasizing exactness rather than elegance. . . . Technical writing is direct and to the point." (Miller 611)

None of these passages necessarily rely on anything remotely like a view of science and rhetoric as "mutually exclusive." The word "rhetoric" is not mentioned even once in these passages, so it is not clear as to why they are supposed to be examples of a mutually exclusive view. Saying that technical writing should be clear, precise, and understandable does not require believing that rhetoric is absolutely separate from science or technical writing. And the absence of the word rhetoric from these passages is not necessarily evidence that the writers consider science and rhetoric to be mutually exclusive. One could *assume* that such is the case, but the point would remain unproved.

Miller's next passages clarify her position somewhat: "These characterizations have in common a conviction that content (that is, ideas, information, facts) is wholly separable from words." (Miller 611) Once again, here is something that we could assume that the authors assume but we have no way of knowing for certain. We simply cannot conclude

from the quoted passages whether the authors believe in a content/language separation (on top of the previous science/rhetoric separation). But Miller *does* make this assumption.

Miller continues, concluding the first section of her article: "They all presuppose what has been called the 'windowpane theory of language': the notion that language provides a view out onto the real world, a view which may be clear or obfuscated. If language is clear, then we see reality accurately; if language is highly decorative or opaque, then we see what is not really there or we see it with difficulty." (Miller 611—612) All of the examples that Miller quotes are indeed concerned with making distinctions between clear and unclear language, so presupposition of this "windowpane theory" is not unreasonable, though still unproved. However Miller's use of the term, never being explained, seems to be left hanging (a blank line separates it from her next paragraph) so that it can take on the quality of what precedes it. Miller does not actually say anything negative about this windowpane theory, but it is situated at the end of a string of ideas that Miller dislikes. And so we are left to assume that the windowpane theory is bad, guilty by association, although we are never directly told what is supposed to be wrong with it.

What these examples of Miller addressing technical writing demonstrate is the deleterious effect that her tendency to over-generalize has on her ability to impart knowledge to others. The specific aspects of Miller's over-generalization tendency that I have already discussed—a writing technique based on vagueness combined with untenable assumptions about viewpoints she disagrees with—form a faulty foundation on which nothing can stand. Miller offers her thoughts about technical writing but they suffer from relying on unproved assumptions, loaded language, and unconvincing claims. There is, in sum, nothing substantive to be taken away from Miller's discussions of technical writing unless, perhaps,

one is completely in synch with her viewpoint and has no doubts about her assumptions. And as I intend to demonstrate in my fourth chapter, Miller's inability to provide constructive advice is a tendency which appears again in her concluding section, in which she aims to provide solutions to the problems she has decried.

CHAPTER IV

MILLER'S VAGUE SOLUTIONS

Miller's tendency to over-generalize starts at the beginning of her article, continues through its length, and reaches its culmination in her concluding section. With her twentieth paragraph, Miller begins to offer her recommendations for improving the situation that she has described, and they are even more over-generalized than what has come before. This concluding section continues to the article's conclusion in the twenty-fourth paragraph. I will quote this section in its entirety, paragraph by paragraph, with comments interspersed between quotations.

(A) ". . . the contention of this essay . . ."

The first paragraph of Miller's concluding section, paragraph twenty, begins as follows:

> It is the contention of this essay that we can improve the teaching and study of technical writing by trading our covert acceptance of positivism for an overt consensualist perspective. For one thing, as I have tried to show, our pedagogy is weakened by submerged inconsistencies and contradictions, which I attribute to an unthinking acceptance of positivist science. For another, we can stop engaging in and submitting to the intellectual tyranny to which our tacit epistemology has led us. (Miller 616)

Miller begins her closing section by returning to the unproved assumption of an intellectually oppressive "positivist" legacy. As Miller again assumes it to exist, she is again

able to easily make her side seem the better. The first sentence is an effectively strategic formulation of words: no one but a mean-spirited "positivist" could disagree with Miller's goal of improving "the teaching and study of technical writing," especially in the breath-of-fresh-air transition from the "covert" to the "overt." Miller's concern in the second sentence over "submerged inconsistencies and contradictions" loads more blame onto "positivism" while completely avoiding both specificity and supporting evidence.

The third sentence continues in this vein, while also becoming actually over-dramatic with the term "intellectual tyranny." The tyranny is still unproven, but it is interesting that by saying that "we" have been both "engaging in and submitting to" this tyranny, Miller allows the reader a warm, fuzzy guilt trip: the guilt is shared with everyone else the article is intended for, and the blame can be conveniently pinned on the alleged "positivist" legacy.

Paragraph twenty continues:

> Science understood as apodictic demonstration demands acknowledgement, an act of submission by the audience. Science understood as argument asks for assent, for an act of will on the part of the audience. (616)

Miller is here assuming without proving that **(1)** science is apodictic and **(2)** that science as currently practiced does not involve argument. She does not provide any evidence for the idea that science is apodictic, and one can assume that science is not apodictic just as easily as Miller assumes that it is. After all, most practitioners of any field of study generally do argue and debate amongst themselves. There may be a valid case for science being apodictic, but Miller does not provide it.

> Good technical writing becomes, rather than the revelation of absolute reality, a persuasive version of experience. (616)

This is an interesting sentence, for a number of reasons. Note Miller's assumption that technical writing up to now has supposedly been "the revelation of absolute reality." Her assumption of a "positivist" tradition is shown here to again be of practically unlimited usefulness. She provides no support for this "absolute reality" idea, but if we are used to believing her concept of a "positivist" legacy, then we may accept the former idea, sight unseen.

It is also interesting that Miller assumes that technical writing should be persuasive. She provides no reason for why this is a good thing, and so we are left to assume that it is good. But there are valid reasons for believing otherwise. In his critique of Miller's article, Patrick Moore made this succinctly illuminating observation: "A person wanting to install a computer program needs no persuading to do it. The person needs the information about *how* to do it." (Moore I 103) Miller provides no reason to support her privileging of persuasion in the realm of technical writing.

> To continue to teach as we have, to acquiesce in passing off a version as an absolute, is coercive and tyrannical; it is to wrench ideology from belief. (616)

Miller does not precisely define just how "we" have been teaching all along, but she assumes that we *have* been doing it, and that it has been under the onus of an absolutism that is "coercive and tyrannical." Miller's phrase ". . . it is to wrench ideology from belief" is an interesting new twist; it implies that she thinks that a belief without an ideology is one which is thoughtless, where that which is believed is unquestionable. But we might well wonder just what the opposite kind of viewpoint is like, one which is thoroughly ideological and the opposite of absolute: "thoroughly relative." Such a view, after all, is what Miller indicates as ideal throughout "Humanistic Rationale."

A clearer image of a "thoroughly relative" viewpoint can be found when we seriously consider what happens when there is no belief in an objective reality. For example, how is an argument won in a thoroughly relativist context? It follows logically that if two people in an argument have no objective standards to appeal to, then the outcome of their conflict will be determined by whoever appears stronger than the other. And if one person in this debate has prestige, experience, and a strong reputation—in sum, professional status—while the other person has none of these things, the former person will likely win every argument by controlling the terms of a debate in which there is no objective standard of comparison. World-views in which reality is socially constructed can thus be the very opposite of free, diverse, tolerant, and open-minded, and can in fact be "coercive and tyrannical":

> I know it is the fashion to say that most of recorded history is lies anyway. I am willing to believe that history is for the most part inaccurate and biased, but what is peculiar to our own age is the abandonment of the idea that history *could* be truthfully written. . . . If you look up the history of the last war in, for instance, the *Encyclopaedia Britannica*, you will find that a respectable amount of the material is drawn from German sources. A British and a German historian would disagree deeply on many things, even on fundamentals, but there would still be that body of, as it were, neutral fact on which neither would seriously challenge the other. It is just this common basis of agreement, with its implication that human beings are all one species of animal, that totalitarianism destroys. Nazi theory indeed specifically denies that any such thing as "the truth" exists. There is, for instance, no such thing as "Science." There is only "German Science," "Jewish Science," etc. The

> implied objective of this line of thought is a nightmare world in which the Leader, or some ruling clique, controls not only the future but *the past*. If the Leader says of such and such an event, "It never happened"—well, it never happened. If he says that two and two are five—well, two and two are five. (Orwell 199)

The author of this passage is George Orwell, and it is an excerpt from his 1943 essay, "Looking Back on the Spanish War." By quoting this passage from Orwell, I am not so much as implying any comparison between views like Miller's and those of National Socialism or any other totalitarian movement. What I am pointing out is that, when examined, Miller's idealization of ideology and rejection of an absolute reality does not necessarily lead to so appealing a result as she may believe.

And when we account for differences of scale, it follows that relativistic despotism is not a phenomenon that is necessarily unique to governments. To quote Patrick Moore:

> Totalizing definitions confer power on the people who adhere to them. They appear to embrace magnanimously everyone and everything, but controlling people can use them consciously or unconsciously to deny valuable resources to others. That is precisely what totalizing rhetoricians do in the academy today: Under the guise of inclusion, they practice a politics of exclusion. . . . For totalizing rhetoricians to accrue and maintain power, they must rationalize away precise or limiting definitions that, in effect, divide the intellectual territory that these rhetoricians want to control." (Moore II 491)

But what is further ironic here is that the belief in an objective reality may in fact be fuel for a strong social conscience and an awareness of the human context in which one's

work takes place, fuel for what Miller repeatedly assumes to be alien to an objectivity-centered philosophy like "positivism":

> In one respect, however, the positivist program has a value that can hardly be questioned. Although the expectation that it can serve as an effective antidote to social dangers stemming from the most various ideological conflicts seems utopian, we are today in a better position than ever before, thanks to more exact definitions of the scientific attitude and the scientific admissibility of assertions, to counteract the ideological misuse of science. In other words, ability to give a relatively good definition of the boundaries of scientific validity—an ability developed thanks largely to the positivists—is of great importance when we must criticize the claims of doctrinaires who invoke the authority of science in support of their slogans. The most glaring example is the attempts that have been made to justify racism on the basis of anthropology. The possibility of demonstrating the hopelessness of such undertakings is not without importance, although it is clear that it cannot decisively influence the outcome of social conflicts. The sheer rigor of the positivist rules has awakened intellectuals to their own responsibilities, and in my opinion have been of practical aid in counteracting attempts to blur the boundaries between the position of the scientist and the obligations of the believer. Precisely because they add up to a kind of scientific ethics, these rules have never lost their timeliness. (Kolakowski 206)

Miller continued:

> Much of what we call technical writing occurs in the context of government and industry and embodies tacit commitments to bureaucratic hierarchies, corporate capitalism, and high technology. (616)

Miller is assuming again, assuming that her audience doesn't realize that "what we call technical writing" (not simply "technical writing") occurs in a context. And not only has that context gone unnoticed, there is apparently something sinister about it, implied by those "tacit commitments." Their existence is not proven, and they are not explicated any further, though we are supposed to get a negative impression from the "bogey man" list: ". . . bureaucratic hierarchies, corporate capitalism, and high technology." Miller doesn't describe just what is wrong with these things, but leaves it to the reader. Since the items in the list all contain associations of power, we are supposed to infer that they are oppressive institutions, and so our egalitarian impulses may cause us to respond to them with boos and hisses.

> If we pretend for a minute that technical writing is objective, we have passed off a particular political ideology as privileged truth. (616)

Miller again uses a subtle word choice by making "pretend" the action of the sentence's first clause: any attempts at thinking technical writing objective are assumed right out to be mere pretending, and they therefore cannot be taken seriously.

(B) ". . . reconceptualize our entire discipline . . ."

Miller's continues her advice in her twenty-first paragraph, beginning as follows:

> Finally, if we revise the understanding of science that underlies our teaching, we may be able to reconceptualize our entire discipline in a more systematic way. I am not prepared to offer a complete reconceptualization here and now.

> There are many promising trends in the texts and the teaching literature, and growing awareness of the problems will help to change the way we teach and talk about technical and scientific writing. But I would like to suggest a general approach to rethinking our discipline along the lines of the new rhetoric. (616—17)

Miller unfortunately doesn't explicate just how "our entire discipline" can be reconceptualized "in a more systematic way." She won't give the reader a "complete reconceptualization" and then goes on to speak of nothing more specific than "promising trends" and "growing awareness." Miller suggests only a "general approach," with no clarification of the "more systematic way," with another promise of the unspecified "new," this time appearing as the "new rhetoric."

> This approach will also provide a way of distinguishing scientific from technical rhetoric, an issue which this essay has avoided until now. We can begin with a sociological and rhetorical truism: communication occurs in communities. Scientists form an epistemic community, consisting of smaller and overlapping disciplinary subcommunities. (617)

Miller here states a not-exactly shocking idea as if it is a tremendous revelation: scientists are part of communities. By implication, then, most readers were not taking this into consideration before and our understanding of science will be in some way enriched. And here is how she, as promised, distinguishes "scientific from technical rhetoric":

> We can define scientific writing as written communication based within a certain community and undertaken for certain communal reasons. Technical

> writing occurs within a somewhat different community for somewhat different reasons. (617)

There we have it: both scientific and technical writing occur in communities, though one is "somewhat different" from the other and occurs for reasons that are correspondingly also "somewhat different." Technically speaking, this distinction can be called systematic, though it is completely vague and, therefore, unusable. It is not likely to help us "reconceptualize our entire discipline in a more systematic way." The very fact that "scientific" and "technical" are different words is enough to signify to us that they represent things that must be at least "somewhat different"; we don't need to read Miller's article to understand that very obvious point.

(C) ". . . much to contribute . . ."

Miller's twenty-second paragraph:

> The scientific community's objectives, methods, and values have been widely discussed. Bronowski, Kuhn, and Ziman, for example, have much to contribute to an understanding of the reasons and conditions for communication in science. (617)

This is another unfortunately vague observation, as the authors mentioned have "much to contribute," but we are given no specifics details about the nature of these contributions.

> Very little has been accomplished, however, to provide a similar characterization of the technological community and its rhetoric. My own hunch is that we should look in the direction of organizational and

> management theory, the sociology of technology, and the cultural history of industry and bureaucracy. These areas may provide a basis for distinguishing the reasons and values which underlie the rhetoric of technical writing. (617)

Not one thing that Miller says here strays very far into specificity. She speaks here of her own "hunch," and that those in the field should be looking in a "direction" of topics that are none too specific themselves. And what exactly is the "sociology of technology?" Who is writing on it? Miller provides no footnotes or references here for those inclined to pursue the matter further, or for those interested in the items that involve "theory" and "cultural history."

(D) ". . . this communalist perspective . . ."

Here is the beginning of Miller's twenty-third paragraph:

> Under this communalist perspective, the teaching of technical or scientific writing becomes more than the inculcation of a set of skills; it becomes a kind of enculturation. We can teach technical or scientific writing, not as a set of techniques for accommodating slippery words to intractable things, but as an understanding of how to belong to a community. To write, to engage in any communication, is to participate in a community; to write well is to understand the conditions of one's own participation—the concepts, values, traditions, and style which permit identification with that community and determine the success or failure of communication. (617)

To sum up Miller's implications in the above passage, regarding the kind of scientific and technical writing that she opposes, current practice has been *nothing but* an inculcation:

unpleasant, dull, forced learning. Further, technical writing has been nothing but a cold, sterile set of "techniques," without any understanding of the community in which it is created in and relates to. But Miller has not proven, or even argued for any of these ideas; she has only assumed them outright in her choice of words so as to make her views seem automatically reasonable.

> Our teaching of writing should present mechanical rules and skills against a broader understanding of why and how to adjust or violate the rules, of the social implications of the roles a writer casts for himself or herself and for the reader, and of the ethical repercussions of one's words. (617)

Miller is now implying that technical writing has been too narrow, since it needs a broader understanding of, among other things, the "ethical repercussions of ones' words." Miller is therefore also implying that technical writing has been lax in paying attention to its ethical dimensions. To imply a lack of ethics is subtly damning; whether the lapse is intentional or not, there is something very unappealing about any field which is in need of a moral reawakening.

> We can thus ground our teaching and our discipline in a communal rationality rather than in contextless logic. (617)

It is interesting that Miller has here given logic itself a subtle slam; it is "contextless logic" that she condemns but she provides no supposedly positive, "contextual" logic as a counter example. This apparent disdain for logic makes it tempting to consider the "communal rationality" she praises as more of a communal *irrationality*, if there is in fact so little room there for logic itself.

> Under this flagrantly rhetorical approach, the subject matter, syllabi, and assignments in a technical writing course may not change very much. But our attitudes might, and so might those of our students and colleagues. (617)

This is the first time that Miller has given us a specific idea of how aspects of technical writing pedagogy could change or not change. It is interesting that the most important thing for Miller is one of changed attitudes, in comparison to a probable lack of changes in "the subject matter, syllabi, and assignments." If one's view is that all knowledge is "thoroughly relative," then one might believe that all one needs to change reality is a change of attitude. And Miller has again encouraged readers to dramatize themselves by way of the phrase "flagrantly rhetorical," as if those who make rhetoric all-encompassing are some sort of fashionably "naughty" rebels, sticking it to that stodgy oppressor who finds them flagrant.

(E) ". . . the humanities requirement."

Miller's final sentences of "Humanistic Rationale," contained in her twenty-fourth paragraph, follow a familiar pattern as they bring the article full circle:

> Finally, let me return to my original problem, the humanities requirement. If we do begin to talk about understanding, rather than only about skills, I believe we have a basis for considering technical writing a humanistic study. (617)

We have traveled from "*could* we argue that technical writing has humanistic value?" (610) to "I believe we have a basis for considering technical writing a humanistic study." (617) And the reason for this conclusion is: understanding. "If we do begin to talk about

understanding . . ." Miller begins, using the word "begin" as a neat way of implying that "we" have never been talking about "understanding" before now.

And beneath the warm, fuzzy, feel-good glow of the word "understanding," just what does it mean? It is so vague in itself that it can mean virtually anything the reader wishes it to. "Understanding that all technical writing is situated in specific communities." "Understanding that science is a thoroughly relative and rhetorical endeavor." Or, if we are skeptical about Miller's ideas, "Understanding that two and two is five."

> The examination and understanding of one's own activity and consciousness, the "return of consciousness to its own center," is, as Walter Ong has suggested, the central impulse of the humanities. I maintain that a course in scientific or technical writing can profitably be based upon this kind of self-examination and self-consciousness, and that, in fact, the rhetorical approach demands such a basis. (617)

Miller again says something that sounds very nice, but is not explicated in any way. It may be that the "rhetorical approach demands such a basis," but it is not clear that the view that Miller criticizes doesn't demand it just as equally. And specifically how does one achieve this "self-examination and self-consciousness?"

Such specifics are left unexamined in favor of vagueness, and so Miller concludes her article:

> It might, in addition, contribute to a more fruitful appreciation and critical understanding of two central forces in our culture, science and technology themselves. (617)

Thus Miller's article ends on another feel-good, yet completely unspecified, sentiment. And that would be to not reiterate the vital fact that nothing in this entire eight-page article has advanced any argument which supports Miller's conclusions.

CHAPTER V

CONCLUSIONS

In my introduction, I began this thesis with a general observation based on personal experience: social constructionists tend to talk as if reality is completely relative while they still act as if there is an absolute reality. In the context of that observation, I read an article by Patrick Moore which was critical of such social constructionist views and which specifically criticized Miller's "Humanistic Rationale." After having analyzed "Humanistic Rationale" in some detail, what remains is to summarize what I have learned, and what its relevance is to my general observation and to the English composition field in general.

What I have learned about "Humanistic Rationale" can be most succinctly summarized by saying that it is an article which is deeply flawed in ways which make it seem strange that it has been as influential as it has been. The main flaw is Miller's tendency to over-generalize, and it is from this flaw that all of the others descend.

Over-generalization is an intellectually troubling thing when examined. For one, a writer who engages in it runs a high risk of making inaccurate statements. This is indeed the case with "Humanistic Rationale," for Miller's use of the term "positivism" and her treatment of science are demonstrably inaccurate. A corollary to inaccuracy is a simple lack of fairness, both to subject and writer. Few writers can know enough about a subject as vast as science to make the kind of sweeping generalizations which Miller makes. Miller thus undercuts the very credibility of her own article by not giving science a fair perspective.

A second problem with over-generalization is that it not only makes it difficult to express opinions about the ideas of others, it also makes it difficult to express one's own

ideas in a coherent manner. This is apparent in Miller's attempts at giving advice for improving the technical writing field. Nothing that she says in that regard is specific enough that one can know with reasonable certainty what it means and, thereby, know how to apply it.

And next to over-generalization, Miller's often misleading and obsfucating rhetorical strategies form the most pervasive flaw of the entire article. All of "Humanistic Rationale" is dependent on the reader sharing Miller's assumptions, a dependence which itself depends on her rhetorical strategies. If one does share Miller's assumptions, then one can read the article and agree with it so long as one is being very uncritical. And if one does not share Miller's assumptions, one will most likely find much to disagree with, although it may be difficult to specifically disagree when no actual arguments have been presented. In either case, Miller has written the article in such a way that it creates either an uncritical affirmation or an unspecific disagreement.

But the extremely flawed nature of "Humanistic Rationale" does not in itself equal an across-the-board self-destruction of social constructionism as a philosophy. Far from it, for it must be remembered that Miller never actually argues for social constructionism in her article. It is therefore important to note that there may very well be powerful and convincing arguments for social constructionism. One of the main problems in "Humanistic Rationale" is that Miller never makes any arguments, convincing or otherwise, for social constructionism or any other viewpoint.

So what conclusions can be drawn from my analysis of Miller's article? The following:

(1) "Humanistic Rationale" is deeply flawed.

(2) These deep flaws are a substantial reason to have doubts about Miller's expression of social constructionism, at least as it appears in that particular article.

(3) The widespread influence of "Humanistic Rationale" seems unjustifiable because of its deep flaws.

(4) The unjustifiably widespread influence of "Humanistic Rationale" may be reason to have reservation (or caution, at least) about the opinions of those who are so influenced.

In essence, then, Miller's "Humanistic Rationale" is a demonstrably flawed article. In itself, that is a fact that affects only the article. But because of its widespread influence, the flaws of "Humanistic Rationale" *may* be reason to have doubts about some of the social constructionism that is expressed in the technical writing field.

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